



Quick Start Guide for the Water Loss Audit

1. Download the software.
 - a. Link: <https://www.awwa.org/Resources-Tools/Resource-Topics/Water-Loss-Control>
 - i. Scroll down to “AWWA Free Water Audit Software (v6.02020)”
 - ii. Fill in the form and click the “submit” button
 - iii. Save As “**Your Utility Name INXXXXXXXX Water Loss Audit DATE**” on your computer
 - b. If you cannot find the link, we can email the file to you
2. Open the software. Some basics: you only enter information in blue cells. Cells that require data are blue, auto generated ones are orange.

Color Key User input Calculated Optional default

Here is a screenshot of first tab. The red box highlights the location of the tabs. You will enter data in the first couple tabs; the rest of the tabs will be auto populated.

AWWA Free Water Audit Software v6.0 FWAS v6.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format and is not meant to take the place of a full-scale, comprehensive water audit format. Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targeting loss reduction levels. This tool contains several separate worksheets. Sheets can be accessed using the tabs at the bottom of the screen, or by clicking the TOC links below.

Table of Contents (TOC)	Enter Basic Information	Key of Input Acronyms <small>In order of appearance in the Worksheet</small>
Start Page The current sheet. Enter contact information and basic audit details.	Name of Utility: Name of Contact Person: Email: Telephone Ext.: City/Town/Municipality: State / Province:	VOS Volume from Own Sources VOSEA VOS Error Adjustment WI Water Imported WIEA WI Error Adjustment WE Water Exported WEEA WE Error Adjustment
Worksheet Enter the required data on this worksheet to calculate the water balance and data grading.	Country: Audit Preparation Date: Audit Year: Audit Year Label: (Fiscal, Calendar, etc) Audit Period Start Date: Audit Period End Date: Volume Reporting Units: Water System Structure: Water Type: System ID Number: Validator Name/ID: Validator Email: Estimated Total Population Served by Water Utility:	BMAC Billed Metered Authorized Consumption BUAC Billed Unmetered Authorized Consumption UMAC Unbilled Metered Authorized Consumption UJAC Unbilled Unmetered Authorized Consumption SDHE Systematic Data Handling Errors CMI Customer Metering Inaccuracies UC Unauthorized Consumption Lm Length of mains Nc Number of service connections Lp Average length of (private) customer service line AOP Average Operating Pressure CRUC Customer Retail Unit Charge VPC Variable Production Cost

Color Key User input Calculated Optional default

Start Page Worksheet Interactive Data Grading Dashboard Notes Blank Sheet Water Balance Loss Control Planning Definitions Service Connection Diagram Acknowledgment

3. The Start Page Tab is where you enter some basic identification information.
 - a. Please enter name of utility without the words “Town of/City of” at the beginning.
 - b. **Contact person** is the name of the person who should be contacted for questions about the audit.
 - c. **Audit Year** is the four-digit year of the data that will be analyzed.
 - d. Hover over cells for more information about what is being requested.
 - e. **System ID Number:** Each audit should reference a single PWSID but, if your system has special circumstances and needs to include multiple PWSIDs, multiple PWSIDs may be entered.
 - f. Enter your **validator’s name, certification number, and email**. Or have them do it when they complete their validation.

4. The Worksheet Tab is where you enter most of the water data. There are three categories of data to enter:
 - a. **Basic water data** which includes WATER SUPPLIED, AUTHORIZED CONSUMPTION, SYSTEM DATA, and COST DATA. If you have questions, most words have a hyperlink to a definition.

AWWA Free Water Audit Software: Worksheet

Water Audit Report for: Sarah's water system

Audit Year: 2020 Jan 01 2020 - Dec 31 2020 Calendar

To access definitions, click the input name

Click 'n' to add notes

Click 'g' to determine data validity grade

To edit water system info: go to start page

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

Water Supplied Error Adjustments

choose entry option:

WATER SUPPLIED

VOS	Volume from Own Sources:	n g	379.310	MG/Yr	n g	percent
WI	Water Imported:	n g	0.000	MG/Yr		
WE	Water Exported:	n g	0.000	MG/Yr		

WATER SUPPLIED: 379.310 MG/Yr

AUTHORIZED CONSUMPTION

BMAC	Billed Metered:	n g	250.556	MG/Yr	
BUAC	Billed Unmetered:	n g		MG/Yr	
UMAC	Unbilled Metered:	n g		MG/Yr	
UUAC	Unbilled Unmetered:	n g 3	0.626	MG/Yr	choose entry option: 0.25% default

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: 251.182 MG/Yr

- b. **Error Adjustments:** no system is perfect, and the spreadsheet is set up to account for typical water supply errors. You can use the “default” or enter another number. These boxes set off to the right of the main data entry cells.

AWWA Free Water Audit Software: Worksheet

Water Audit Report for: **Sarah's water system**
 Audit Year: **2020** | **Jan 01 2020 - Dec 31 2020** | **Calendar**

To access definitions, click the [input name](#) | Click 'n' to add notes | Click 'g' to determine data validity grade | To edit water system info: [go to start page](#)

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

WATER SUPPLIED | Water Supplied Error Adjustments | choose entry option:

VOS	Volume from Own Sources:	<input type="text" value="n"/> <input type="text" value="g"/>	379.310	MG/Yr	<input type="text" value="n"/> <input type="text" value="g"/>	<input type="text" value="percent"/>	<input type="text"/>
WI	Water Imported:	<input type="text" value="n"/> <input type="text" value="g"/>	0.000	MG/Yr			
WE	Water Exported:	<input type="text" value="n"/> <input type="text" value="g"/>	0.000	MG/Yr			
WATER SUPPLIED:			379.310	MG/Yr			

AUTHORIZED CONSUMPTION | choose entry option:

BMAC	Billed Metered:	<input type="text" value="n"/> <input type="text" value="g"/>	250.556	MG/Yr		
BUAC	Billed Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/>		MG/Yr		
UMAC	Unbilled Metered:	<input type="text" value="n"/> <input type="text" value="g"/>		MG/Yr		
UUAC	Unbilled Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/> <input type="text" value="3"/>	0.626	MG/Yr	<input type="text" value="0.25%"/>	<input type="text" value="default"/>

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: **251.182** MG/Yr

- c. **Data validity grades:** this is measurement of how confident you are in the data that you are providing. You will enter a data validity grade by clicking on lower case “g”.

AWWA Free Water Audit Software: Worksheet

Water Audit Report for: **Sarah's water system**
 Audit Year: **2020** | **Jan 01 2020 - Dec 31 2020** | **Calendar**

To access definitions, click the [input name](#) | Click 'n' to add notes | Click 'g' to determine data validity grade | To edit water system info: [go to start page](#)

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

WATER SUPPLIED | Water Supplied Error Adjustments | choose entry option:

VOS	Volume from Own Sources:	<input type="text" value="n"/> <input type="text" value="g"/>	379.310	MG/Yr	<input type="text" value="n"/> <input type="text" value="g"/>	<input type="text" value="percent"/>	<input type="text"/>
WI	Water Imported:	<input type="text" value="n"/> <input type="text" value="g"/>	0.000	MG/Yr			
WE	Water Exported:	<input type="text" value="n"/> <input type="text" value="g"/>	0.000	MG/Yr			
WATER SUPPLIED:			379.310	MG/Yr			

AUTHORIZED CONSUMPTION | choose entry option:

BMAC	Billed Metered:	<input type="text" value="n"/> <input type="text" value="g"/>	250.556	MG/Yr		
BUAC	Billed Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/>		MG/Yr		
UMAC	Unbilled Metered:	<input type="text" value="n"/> <input type="text" value="g"/>		MG/Yr		
UUAC	Unbilled Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/> <input type="text" value="3"/>	0.626	MG/Yr	<input type="text" value="0.25%"/>	<input type="text" value="default"/>

Default option selected for Unbilled Unmetered, with automatic data grading of 3

AUTHORIZED CONSUMPTION: **251.182** MG/Yr

- The Interactive Data Grading tab is where the software helps you determine the data validity grade. There are 19 categories with a handful of questions related to each one. The cells at the top will turn from white (incomplete) to orange (complete) as the questions are answered.

Sarah's water system
2020

AWWA Free Water Audit Software: **Interactive Data Grading**

White = incomplete
Orange = complete

Use acronyms for navigation

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go to input

Volume from Own Sources (VOS) - Data Grading Criteria

vos	Criteria Question	Select Best-Fit Answers to All Visible Questions
vos.0	Did the water utility supply any water from its own sources during the audit year?	Yes
vos.1	What percent of own supply volume is metered?	>95 - 99%
	<p>For questions 2-10 below: Choose the answer that applies for those meters that measure >90% of the finished water volume.</p> <p>In-situ flow accuracy testing = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume.</p> <p>Electronic calibration = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s).</p> <p>Secondary device can include conversion to mA, meter transmitter or similar instrumentation.</p> <p>Tertiary device can include SCADA historian or other computerized archival system.</p>	
vos.2	What is the frequency of electronic calibration?	Annually

Once all the questions are answered, the data validity grades will populate on the Worksheet Tab and the Dashboard tab. The Worksheet Tab includes “**Priority Areas for Attention to Improve Data Validity**”, which may be useful next steps. The Dashboard Tab and the Loss Control Planning Tab also provide suggestions on improving performance.

Still need help? Email the IFA at WaterResources@ifa.in.gov

For more information: visit the IFA Water Loss Audit website: <https://www.in.gov/ifa/water-loss-audits/>